

## ABSTRACT

A sensor which senses concentrations of a component of a fluid. In a dialysis system, the sensor can monitor the total ammonia and ammonium concentration in dialysate. The sensor has an optical indicator, such as an ammonia sensitive membrane, positioned in direct contact with the dialysate fluid when in use. The ammonia sensitive membrane has a variable optical indication, such as a variable color change, in relation to the concentration of ammonia in the dialysate. An optical reader reads the color change of the membrane to measure the total ammonia and ammonium concentration in the dialysate. The sensor can be used in the dialysis system to monitor the effectiveness of sorbants which remove ammonia/ammonium which is produced from an enzyme reaction with urea, the urea being removed from a patient during dialysis treatment.